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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---------------------------|-------------|----------------------|---------------------|------------------|
| 10/500,556 | 06/30/2004 | Gianni Carturan | J1036.06/P006 | 5193 |
| 24998 | 7590 | 10/18/2006 | EXAMINER | |
| DICKSTEIN SHAPIRO LLP | | | LILLING, HERBERT J | |
| 1825 EYE STREET NW | | | ART UNIT | |
| Washington, DC 20006-5403 | | | PAPER NUMBER | |
| | | | 1657 | |

DATE MAILED: 10/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/500,556

Applicant(s)

CARTURAN ET AL.

Examiner

HERBERT J. LILLING

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) 20-26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 20-26 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 June 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>June 30, 2004 (1 Pg)</u> . | 6) <input type="checkbox"/> Other: _____ |

1. Receipt is acknowledged of the amendment filed September 25, 2006.

2. Claims 1-26 remain pending in this application.

3. Applicant elected Group I Invention, claims 1-19.

Claims 20-26 have been withdrawn from consideration as drawn to the non-elected inventions without traverse.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention in view of the expression in Claim 1, lines 9-10 for the limitation followed by "preferably" which recites "of from 20- 100 deg C.."....." in accordance with the following:

i.> A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat.

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App. & Inter. 1989), as to where broad language is followed by "such as", in the present application "preferably" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949).

a.> In the present instance, **claims 1-19** recites the broad recitation 20-180 deg C, and the claim also recites followed by 20 to 100 deg C which is the narrower statement of the range/limitation.

b.> In **claim 17**, recites the broad recitation for the thickness 0.01 to 10 um as well as the narrower limitation, 0.01 to 0.3 um which renders the claim vague and indefinite.

c.> In **Claim 18**, recite the broad recitation "...higher than 10 Pa' as well as the narrower limitation " from 12 to 20 Pa" which renders the claim vague and indefinite.

ii.> In addition, **claims 1-19** are rejected in view of the term "**preferably**" in **claim 1** , as well as in **Claim 17**, which renders the claims vague and indefinite as to the scope of the claims. In addition, **claim 18** contains "preferably which renders the claim vague and indefinite.

iii.> **Claim 15** is vague and indefinite in scope for the term "preferably" which renders the claim vague and indefinite as to the scope of the claimed invention.

iv.> Claims 1-19 are vague and indefinite in scope with respect to the expression "Si derivatives". The term derivative(s) is (are) not defined in the specification, which renders the claim(s) vague and indefinite in scope.

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6, 11-17 and 19 are rejected under 35 U.S.C. 102(b) as anticipated by Altmanini et al "SiO₂ Entrapment of animal Cells. Part 2: Protein diffusion through collagen membranes coated with sol-gel SiO₂".

Altmanini et al teaches in Table I an immobilized product (No 3 or No 4) prepared by a process within the scope of the claimed processes that produces a siliceous immobilized substrate having a threshold within the claimed range of 10,000 and 150,000 as well as being higher than the required molecular weights of claims 3-6 that anticipates the claimed processes.

6. Or in the alternative:

Claims 1-6, 11-17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Altmanini et al "SiO₂ Entrapment of animal Cells. Part 2: Protein diffusion through collagen membranes coated with sol-gel SiO₂".

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

The reference teaches the control of immobilized substrates with gaseous silicon alkoxides which includes the specific silicon oxides as noted on page 3058, column lines 2-3, which experimental conditions includes a temperature within the claimed range to obtain immobilized substrates behaves as an effective barrier to the diffusion of high molecular weight protein macromolecules that is according to the reference within the range of macromolecules having a threshold of with molecular weights in the range 17,800-341000, see page 3057, column 2, line 2 of description.

The claims are drawn to a specific range, which includes 10,000 to 150,000.

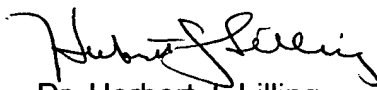
It would have been prima facie obvious to one of ordinary skilled in the art to prepare an immobilized substrate within the claimed range in view of the reference which includes the lower range of 10,000 as well as the higher claimed range which is within the range of the reference absent unexpected or unobvious process steps or data for the claimed processes. The selection of the substrate as noted by Table I would clearly render obvious the claimed 150,000 threshold (No three substrate) and the lower (No one substrate) for the lower threshold.

7. **No claim is allowed.**

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Lilling whose telephone number is 571-272-0918 and Fax Number is (703) 872-9306 or SPE Jon Weber whose telephone number is 571-272-0925. Examiner can be reached Monday-Thursday from about 5:30 A.M. to about 3:00 P.M. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0196.

Information regarding the status of an application may be obtained from the Patent Application information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://portal.uspto.gov/external/portal/pair>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

H.J.Lilling: HJL
(571) 272-0918
Art Unit **1657**
October 03, 2006


Dr. Herbert J. Lilling
Primary Examiner
Group 1600 Art Unit 1657